

Application  
Number

SEARCH

IDS Flag Clearance for Application 10807105

IDS  
Information

Content	Mailroom Date	Entry Number	IDS Review	Reviewer
M844	05-28-2004	13	<input checked="" type="checkbox"/>	08-11-2005 00:40:14 IDS CONV

UPDATE

## Refine Search

### Search Results -

Term	Documents
ELASTIC	814443
ELASTICS	3224
LAYER	3486873
LAYERS	1409390
(26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15
(L26 AND (ELASTIC ADJ LAYER) ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L27

Refine Search

Recall Text



Clear

Interrupt

### Search History

DATE: Tuesday, September 20, 2005   [Printable Copy](#)   [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L27</u>	L26 and (elastic adj layer)	15	<u>L27</u>
<u>L26</u>	L25 and (Asker-C adj hardness)	19	<u>L26</u>
<u>L25</u>	(conductive adj roller)	3264	<u>L25</u>
<u>L24</u>	(ion adj conductive adj roller)	3	<u>L24</u>
<u>L23</u>	L3 and (ion adj conductive adj roller)	3	<u>L23</u>
<u>L22</u>	L20 and (asker-C adj hardness)	15	<u>L22</u>
<u>L21</u>	L20 and (asker-C)	23	<u>L21</u>

<u>L20</u>	L19 and (hardness)	143	<u>L20</u>
<u>L19</u>	L3 and (elastic adj layer)	246	<u>L19</u>
<i>DB=USPT; PLUR=YES; OP=ADJ</i>			
<u>L18</u>	6335133.pn.	1	<u>L18</u>
<u>L17</u>	6335133.pn.	1	<u>L17</u>
<u>L16</u>	6337165.pn.	1	<u>L16</u>
<u>L15</u>	6337165.pn.	1	<u>L15</u>
<u>L14</u>	6562530.pn.	1	<u>L14</u>
<u>L13</u>	6562530.pn.	1	<u>L13</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L12</u>	L9 and (Asker-C adj hardness)	15	<u>L12</u>
<u>L11</u>	L9 and hardness	114	<u>L11</u>
<u>L10</u>	L9 and hard\$4	138	<u>L10</u>
<u>L9</u>	L7 and (elastic adj layer)	191	<u>L9</u>
<u>L8</u>	L7 and (elastic)	403	<u>L8</u>
<u>L7</u>	L3 and (photosensitive)	757	<u>L7</u>
<u>L6</u>	L1 and (electrophotographic)	2	<u>L6</u>
<u>L5</u>	L3 and (electrophotographic)	0	<u>L5</u>
<u>L4</u>	L3 and (electrophotographic)	0	<u>L4</u>
<u>L3</u>	L2 and (conductive adj roller)	1357	<u>L3</u>
<u>L2</u>	(printer or (copy\$4 adj machine) or (facsimile\$4 adj machine))	652404	<u>L2</u>
<u>L1</u>	(image adj forming adj (apparatus or machine))	81041	<u>L1</u>

END OF SEARCH HISTORY

## Hit List

Clear

Generate Collection

Print

Fwd Refs

Bkwd Refs

Generate OACS

Search Results - Record(s) 1 through 15 of 15 returned.

☐ 1. Document ID: US 20040228659 A1 Relevance Rank: 81

Using default format because multiple data bases are involved.

L27: Entry 3 of 15

File: PGPB

Nov 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040228659

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040228659 A1

TITLE: Ion conductive roller and image forming apparatus employing ion conductive roller

PUBLICATION-DATE: November 18, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nishida, Satoshi	Numazu-shi		JP	

US-CL-CURRENT: 399/176; 399/313

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIG	Draw D
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☐ 2. Document ID: US 20050026062 A1 Relevance Rank: 77

L27: Entry 2 of 15

File: PGPB

Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050026062

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050026062 A1

TITLE: Non-magnetic toner

PUBLICATION-DATE: February 3, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Komoto, Keiji	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Moriki, Yuji	Shizuoka		JP	
Katsuta, Yasushi	Shizuoka		JP	

Nakayama, Kenichi	Shizuoka	JP
Kaburagi, Takeshi	Shizuoka	JP
Tosaka, Emi	Shizuoka	JP
Hashimoto, Yasuhiro	Shizuoka	JP

APPL-NO: 10/ 764531 [PALM]  
DATE FILED: January 27, 2004

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-203040	2003JP-2003-203040	July 29, 2003

INT-CL: [07] G03 G 9/08

US-CL-PUBLISHED: 430/108.5; 430/108.6, 430/110.3

US-CL-CURRENT: 430/108.5; 430/108.6, 430/110.3

REPRESENTATIVE-FIGURES: 1

## ABSTRACT:

In a non-magnetic toner having non-magnetic toner particles containing at least a binder resin and a colorant, and an inorganic fine powder, the non-magnetic toner particles contain at least one ether compound having a specific structure, and the ether compound is in a content of from 5 ppm to 1,000 ppm.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMG	Draw D
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☐ 3. Document ID: US 6635398 B1      Relevance Rank: 72

L27: Entry 13 of 15

File: USPT

Oct 21, 2003

US-PAT-NO: 6635398

DOCUMENT-IDENTIFIER: US 6635398 B1

TITLE: Dry toner, dry toner production process, and image forming method

DATE-ISSUED: October 21, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komoto; Keiji	Numazu			JP
Kukimoto; Tsutomu	Yokohama			JP
Chiba; Tatsuhiko	Kamakura			JP
Hashimoto; Akira	Mishima			JP

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
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Canon Kabushiki Kaisha

Tokyo

JP

03

APPL-NO: 09/ 695079 [PALM]

DATE FILED: October 25, 2000

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	11-304680	October 26, 1999
JP	2000-320708	October 20, 2000
JP	2000-320709	October 20, 2000

INT-CL: [07] G03 G 9/087, G03 G 9/097

US-CL-ISSUED: 430/108.23; 430/109.3, 430/110.3, 430/111.4, 430/124, 430/125

US-CL-CURRENT: 430/108.23; 430/109.3, 430/110.3, 430/111.4, 430/124, 430/125

FIELD-OF-SEARCH: 430/109.3, 430/110.3, 430/111.4, 430/108.23, 430/124, 430/125, 430/126, 430/101, 430/120

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>2297691</u>	October 1942	Carlson	
<u>3269626</u>	August 1966	Albrecht	266/177
<u>3788994</u>	January 1974	Wellman et al.	252/62.1
<u>4533617</u>	August 1985	Inoue et al.	
<u>4657837</u>	April 1987	Morita et al.	
<u>4664504</u>	May 1987	Oda et al.	355/15
<u>4769676</u>	September 1988	Mukai et al.	355/15
<u>5166028</u>	November 1992	Paine et al.	
<u>5282007</u>	January 1994	Oshiumi	355/296
<u>5312704</u>	May 1994	Fuller et al.	430/45
<u>5514763</u>	May 1996	Kmiecik-Lawrynowicz et al.	536/340
<u>5571653</u>	November 1996	Kasuya et al.	430/109.3
<u>5721433</u>	February 1998	Kosaka	250/573

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0529927	March 1993	EP	
0757294	February 1997	EP	
1414159	November 1975	GB	
1477504	June 1977	GB	
42-23910	November 1967	JP	
43-24748	October 1968	JP	
44-9880	May 1969	JP	

46-15876	April 1971	JP
48-75032	October 1973	JP
50-44836	April 1975	JP
48-75032	October 1977	JP
56-13945	April 1981	JP
57-493	January 1982	JP
57-37353	March 1982	JP
58-205162	November 1983	JP
58-205163	November 1983	JP
59-061842	April 1984	JP
59-133573	July 1984	JP
61-56352	March 1986	JP
62-203182	September 1987	JP
63-128357	May 1988	JP
63-128358	May 1988	JP
63-128359	May 1988	JP
63-128360	May 1988	JP
63-128361	May 1988	JP
63-128362	May 1988	JP
63-133179	June 1988	JP
63-281168	November 1988	JP
1-20587	January 1989	JP
2-302772	December 1990	JP
4-184358	July 1992	JP
4-276762	October 1992	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
6-242631	September 1994	JP
7-271096	October 1995	JP
7-301947	November 1995	JP
8-136439	May 1996	JP
8-262795	October 1996	JP
8-286416	November 1996	JP
9-265209	October 1997	JP
10-319628	December 1998	JP
11-160909	June 1999	JP

## OTHER PUBLICATIONS

Japanese Patent Office Partial Machine-Assisted Translation of JP 10-319628 (Pub 12/98), Including Abstract, Claims, Paragraphs 0001-0092 and 0182-0229.\*  
Lee, et al., "The Glass Transition Temperatures of Polymers", Polymer Handbook, 2nd Ed., by Wiley--Interscience, pp. III-139 to III-192, (1971).  
Japanese Industrial Standard JIS-B-0601 (1982), Ed. 7, Definitions and Designation of Surface Roughness, Translation pp. 1-12, (1983).

ART-UNIT: 1756

PRIMARY-EXAMINER: Dote; Janis L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper &amp; Scinto

## ABSTRACT:

A dry toner has toner particles containing at least a binder resin, a colorant and a wax component and an external additive. The binder resin contains a component derived from a monomer selected from butadiene, isoprene and chloroprene. The toner has a main Tg from 40.degree. C. to 70.degree. C. When specific surface area measured by the BET method in an environment of 23.degree. C. atmospheric temperature and 65% relative humidity is represented by A (m.sup.2 /g) and specific surface area measured by the BET method in an environment of 50.degree. C. atmospheric temperature and 3% relative humidity is represented by B (m.sup.2 /g), the toner satisfies the following relationship:  $0.8 \leq A \leq 4.0$ ,  $0.80 \leq (B/A) \leq 1.05$ . The toner has a circle-corresponding number-average particle diameter D1 from 2 to 10 .mu.m, an average circularity from 0.950 to 0.995 and a circularity standard deviation less than 0.040. The toner has a main-peak molecular weight from 2,000 to 100,000 and contains a THF-insoluble matter from 5 to 60% by weight.

31 Claims, 9 Drawing figures

Pub.	Title	Publication	Front	Review	Classification	Date	Reference	Claims	DOC	Draw. D.
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☐ 4. Document ID: US 20040191665 A1      Relevance Rank: 54

L27: Entry 4 of 15

File: PGPB

Sep 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040191665  
 PGPUB-FILING-TYPE: new  
 DOCUMENT-IDENTIFIER: US 20040191665 A1

TITLE: Method for forming an image

PUBLICATION-DATE: September 30, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Watanabe, Shuntaro	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Yamamoto, Takeshi	Kanagawa		JP	
Yachi, Shinya	Shizuoka		JP	
Nonaka, Katsuyuki	Ibaraki		JP	

APPL-NO: 10/ 753058      [PALM]  
 DATE FILED: January 7, 2004

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-002076 (PAT.	2003JP-2003-002076 (PAT.	January 8, 2003



INT-CL: [07] G03 G 15/20

US-CL-PUBLISHED: 430/124; 430/111.41, 399/279, 399/286

US-CL-CURRENT: 430/124; 399/279, 399/286, 430/111.41

REPRESENTATIVE-FIGURES: NONE

## ABSTRACT:

To provide an method for forming an image capable of effectively suppressing a toner from deteriorating and also capable of keeping the quality of an image for a long period of time, even when the method is applied to an apparatus with as high process speed. The present invention provides an method for forming an image, in which a developing unit is used, which includes: a rotatable cylindrical toner bearing member having a diameter represented as  $R_d$  (mm); and a rotatable cylindrical toner-supplying member having a diameter  $R_s$  (mm), the diameters  $R_d$  and  $R_s$  satisfying the following relational expression (1):

$$1.1toreq.R_s - R_d.1toreq.10 \quad (1)$$

and in which the nonmagnetic one-component toner having an degree of aggregation of 5 to 30% and an electric resistivity of  $1 \times 10^{14}$  to  $1 \times 10^{18}$   $\Omega \cdot \text{cm}$  at an electric field of  $1 \times 10^4$  V/cm is used.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 5. Document ID: US 6806009 B2      Relevance Rank: 53

L27: Entry 12 of 15

File: USPT

Oct 19, 2004

US-PAT-NO: 6806009

DOCUMENT-IDENTIFIER: US 6806009 B2

**\*\* See image for Certificate of Correction \*\***

TITLE: Electrophotographic photosensitive member, process cartridge and electrophotographic apparatus

DATE-ISSUED: October 19, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tanaka; Daisuke	Shizuoka			JP
Morikawa; Yosuke	Kanagawa			JP
Ikezue; Tatsuya	Kanagawa			JP
Nakata; Kouichi	Shizuoka			JP
Yoshimura; Kimihiro	Kanagawa			JP

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
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Canon Kabushiki Kaisha

Tokyo

JP

03

APPL-NO: 10/ 314354 [PALM]

DATE FILED: December 9, 2002

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY

APPL-NO

APPL-DATE

JP

2001-389242

December 21, 2001

INT-CL: [07] G03 G 5/147

US-CL-ISSUED: 430/66; 430/59.6, 430/58.65, 430/58.8, 399/159

US-CL-CURRENT: 430/66; 399/159, 430/58.65, 430/58.8, 430/59.6

FIELD-OF-SEARCH: 430/66, 430/58.05, 430/59.6, 430/58.65, 430/58.8, 399/159

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4880717</u>	November 1989	Kitagawa et al.	430/58
<u>5008172</u>	April 1991	Rokutanzone et al.	430/67
<u>6335133</u>	January 2002	Nagasaka	430/64
<u>6337165</u>	January 2002	Fujii et al.	430/58.05
<u>6562530</u>	May 2003	Morikawa et al.	430/66
<u>2001/0036585</u>	November 2001	Komatsu et al.	430/100
<u>2002/0045116</u>	April 2002	Morikawa et al.	430/66

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2351118 A14	December 2001	CA	
01041449	October 2000	EP	
1172701	January 2002	EP	
57030846	February 1982	JP	
62295066	December 1987	JP	
1306857	December 1989	JP	
2050167	February 1990	JP	
5181299	July 1993	JP	
6082223	March 1994	JP	
10228126	August 1998	JP	
10228127	August 1998	JP	

ART-UNIT: 1756

PRIMARY-EXAMINER: Goodrow; John L

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper &amp; Scinto

## ABSTRACT:

In an electrophotographic photosensitive member comprising a cylindrical support, and provided thereon a photosensitive layer and a protective layer in this order, which cylindrical support has an outer diameter of less than 30 mm, the difference between a coefficient of thermal expansion  $\alpha_{sub.1}$  measured from the top of the protective layer and a coefficient of thermal expansion  $\alpha_{sub.2}$  measured after the protective layer has been removed,  $\frac{\alpha_{sub.1}}{\alpha_{sub.2}}$ , is more than  $5.0 \times 10^{-7}$  degree C.<sup>-1</sup> to less than  $1.0 \times 10^{-4}$  degree C.<sup>-1</sup>, and the modulus of elastic deformation  $E\%$  measured from the top of the protective layer is more than 30% to less than 60%. Also disclosed are a process cartridge and an electrophotographic apparatus which have such an electrophotographic photosensitive member.

27 Claims, 6 Drawing figures

Full	Title	Abstract	Front	Review	Classification	Date	Reference	Claims	Keywords	Drawings
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☐ 6. Document ID: US 20030194625 A1 Relevance Rank: 53

L27: Entry 6 of 15

File: PGPB

Oct 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030194625

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030194625 A1

TITLE: Electrophotographic photosensitive member, process cartridge and electrophotographic apparatus

PUBLICATION-DATE: October 16, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Tanaka, Daisuke	Shizuoka		JP	
Morikawa, Yosuke	Kanagawa		JP	
Ikezue, Tatsuya	Kanagawa		JP	
Nakata, Kouichi	Shizuoka		JP	
Yoshimura, Kimihiro	Kanagawa		JP	

APPL-NO: 10/ 314354 [PALM]

DATE FILED: December 9, 2002

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	389242/100	2001JP-389242/100	December 21, 2001

INT-CL: [07] G03 G 5/147

US-CL-PUBLISHED: 430/58.8; 430/66, 430/58.05, 430/59.6, 430/58.65, 399/159

US-CL-CURRENT: 430/58.8; 399/159, 430/58.05, 430/58.65, 430/59.6, 430/66

REPRESENTATIVE-FIGURES: 1A

## ABSTRACT:

In an electrophotographic photosensitive member comprising a cylindrical support, and provided thereon a photosensitive layer and a protective layer in this order, which cylindrical support has an outer diameter of less than 30 mm, the difference between a coefficient of thermal expansion  $\alpha_{11}$  measured from the top of the protective layer and a coefficient of thermal expansion  $\alpha_{22}$  measured after the protective layer has been removed,  $\alpha_{11} - \alpha_{22}$ , is more than  $5.0 \times 10^{-7}$  degree. C.<sup>-1</sup> to less than  $1.0 \times 10^{-4}$  degree. C.<sup>-1</sup>, and the modulus of elastic deformation We % measured from the top of the protective layer is more than 30% to less than 60%. Also disclosed are a process cartridge and an electrophotographic apparatus which have such an electrophotographic photosensitive member.

Full	Title	Creation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keywords	Drawings
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☐ 7. Document ID: US 20050026063 A1      Relevance Rank: 44

L27: Entry 1 of 15

File: PGPB

Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050026063  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20050026063 A1

TITLE: Toner

PUBLICATION-DATE: February 3, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Komoto, Keiji	Shizuoka		JP	
Katsuta, Yasushi	Shizuoka		JP	
Mikuriya, Yushi	Shizuoka		JP	
Kaburagi, Takeshi	Shizuoka		JP	
Tosaka, Emi	Shizuoka		JP	

APPL-NO: 10/ 808401    [PALM]  
DATE FILED: March 25, 2004

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-281761	2003JP-2003-281761	July 29, 2003
JP	2004-049917	2004JP-2004-049917	February 25, 2004

INT-CL: [07] G03 G 9/087

US-CL-PUBLISHED: 430/109.1; 430/108.6, 430/108.7, 430/137.15  
US-CL-CURRENT: 430/109.1; 430/108.6, 430/108.7, 430/137.15

REPRESENTATIVE-FIGURES: 1

## ABSTRACT:

A toner includes toner particles and an inorganic fine powder mixed with the toner particles. The toner particles contain a binder resin, a coloring agent, a releasing agent, and a sulfur-containing resin. The toner particles contain at least one element selected from the group consisting of magnesium, calcium, barium, zinc, aluminum, and phosphorus and satisfy the relationship:

$$4.1 \text{toreq.T/S.1toreq.30}$$

wherein T represents the total content of the element in ppm, and S represents the content of sulfur in ppm. The weight-average particle diameter (D4) of the toner is in the range of 3 to 10  $\mu\text{m}$ . The average circularity of the toner is within the range of 0.950 to 0.995.

Full	Title	Classen	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	DOC	Draw
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☐ 8. Document ID: US 20040038142 A1      Relevance Rank: 42

L27: Entry 5 of 15

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040038142

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040038142 A1

TITLE: Developer, and image forming method and process cartridge using such developer

PUBLICATION-DATE: February 26, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Yoshida, Satoshi	Tokyo		JP	
Tanikawa, Hirohide	Shizuoka		JP	

APPL-NO: 10/ 158519      [PALM]

DATE FILED: May 30, 2002

INT-CL: [07] G03 G 9/097

US-CL-PUBLISHED: 430/108.6; 430/110.4, 430/108.1, 430/111.41, 430/108.3, 430/108.7, 430/126, 399/252, 430/122

US-CL-CURRENT: 430/108.6; 399/252, 430/108.1, 430/108.3, 430/108.7, 430/110.4, 430/111.41, 430/122, 430/126

REPRESENTATIVE-FIGURES: 3

## ABSTRACT:

A developer comprising toner particles containing at least a binder resin and a colorant, an inorganic fine powder whose primary particles have a number-average particle diameter of from 4 nm to 50 nm, and a conductive fine powder whose primary particles have a number-average particle diameter of from 50 nm to 500 nm. The conductive fine powder contains an agglomerated matter of the primary particles. The developer comprises 15% to 60% by number of particles having particle diameters in the range of from 1.00 .mu.m, inclusive, to 2.00 .mu.m, exclusive, and 15% to 70% by number of particles having particle diameters in the range of from 3.00 .mu.m, inclusive, to 8.96 .mu.m, exclusive, in number-based particle size distribution of particles having particle diameters in the range of from 0.60 .mu.m, inclusive, to 159.21 .mu.m, exclusive. Also, an image forming method and a process cartridge are disclosed which make use of the developer.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMO	View
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☐ 9. Document ID: US 20030175043 A1      Relevance Rank: 42

L27: Entry 7 of 15

File: PGPB

Sep 18, 2003

PGPUB-DOCUMENT-NUMBER: 20030175043  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20030175043 A1

TITLE: Process cartridge and developing-assembly unit

PUBLICATION-DATE: September 18, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Handa, Satoshi	Shizuoka		JP	
Kawakami, Hiroaki	Kanagawa		JP	
Moriki, Yuji	Shizuoka		JP	
Suzuki, Kiyokazu	Shizuoka		JP	
Hashimoto, Yasuhiro	Shizuoka		JP	

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Canon Kabushiki Kaisha	Tokyo		JP		03

APPL-NO: 10/ 340685    [PALM]  
DATE FILED: January 13, 2003

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2002-008069	2002JP-2002-008069	January 16, 2002

INT-CL: [07] G03 G 15/08, G03 G 21/16

US-CL-PUBLISHED: 399/111; 399/252

US-CL-CURRENT: 399/111; 399/252

REPRESENTATIVE-FIGURES: 3

## ABSTRACT:

In a process cartridge having a latent-image-bearing member and a developing means having a developer-holding part and a developing member, at a vertical section which bisects in the process cartridge the surface of the latent-image-bearing member with which surface the developing member is brought into pressure contact, a developer agitation and transport member has at least two rotary agitation and transport means having rotating shafts falling at right angles with the vertical section. Where, at the vertical section, the area of the developer-holding part is represented by S1 and the area of the part corresponding to the movable region of the rotary agitation and transport means is represented by S2, the ratio of S2 to S1, S2/S1, is from 0.8 to 0.99; and the ratio of a long side Sa to a short side Sb, Sa/Sb, of a circumparallelogram having a minimum area in respect to the area S1 in the vertical section is from 1.5 to 3.0. The non-magnetic one-component developer contains at least a binder resin and a colorant and has a fluidity index of from 50 to 90 and a floodability index of from 45 to 96.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 10. Document ID: US 6859633 B2      Relevance Rank: 42

L27: Entry 11 of 15

File: USPT

Feb 22, 2005

US-PAT-NO: 6859633

DOCUMENT-IDENTIFIER: US 6859633 B2

TITLE: Integral-type process cartridge and developing-assembly unit including non-magnetic one-component toner

DATE-ISSUED: February 22, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Handa; Satoshi	Shizuoka			JP
Kawakami; Hiroaki	Kanagawa			JP
Moriki; Yuji	Shizuoka			JP
Suzuki; Kiyokazu	Shizuoka			JP
Hashimoto; Yasuhiro	Shizuoka			JP

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 10/ 340685      [PALM]

DATE FILED: January 13, 2003

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2002-008069	January 16, 2002

INT-CL: [07] G03 G 15/04, G03 G 15/08

US-CL-ISSUED: 399/119; 399/252, 399/254

US-CL-CURRENT: 399/119; 399/252, 399/254

FIELD-OF-SEARCH: 399/111, 399/119, 399/222, 399/252, 399/254, 399/255, 399/256, 399/258, 399/262, 399/263, 399/284, 399/285, 430/105, 430/107.1, 430/108.1, 430/108.4, 430/109.1, 430/109.4, 430/110.1, 430/110.3, 430/110.4

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4777512</u>	October 1988	Takahashi et al.	399/254 X
<u>4987452</u>	January 1991	Nakagawa et al.	399/254
<u>5077583</u>	December 1991	Bhagat	399/255
<u>5701571</u>	December 1997	Amamiya et al.	399/343
<u>5826132</u>	October 1998	Damji et al.	399/119 X
<u>6051350</u>	April 2000	Inaba et al.	430/45
<u>6085051</u>	July 2000	Miyasaka et al.	399/119 X
<u>6287739</u>	September 2001	Kawakami et al.	430/110.3 X
<u>6289190</u>	September 2001	Amamiya et al.	399/174
<u>6301453</u>	October 2001	Tsutsumi	399/285 X
<u>6316157</u>	November 2001	Yoshikawa et al.	430/108.3
<u>6349182</u>	February 2002	Otsubo et al.	399/12
<u>6440630</u>	August 2002	Isobe et al.	430/124
<u>2001/0028816</u>	October 2001	Kakeshita et al.	399/284 X

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2001-42625	February 2001	JP	

ART-UNIT: 2852

PRIMARY-EXAMINER: Brase; Sandra L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper &amp; Scinto

## ABSTRACT:

In a process cartridge having a latent-image-bearing member and a developing device having a developer-holding part and a developing member, at a vertical section which bisects in the process cartridge the surface of the latent-image-bearing



member with which surface the developing member is brought into pressure contact, a developer agitation and transport member has at least two rotary agitation and transport members having rotating shafts falling at right angles with the vertical section. Where, at the vertical section, the area of the developer-holding part is represented by S1 and the area of the part corresponding to the movable region of the rotary agitation and transport member is represented by S2, the ratio of S2 to S1, S2/S1, is from 0.8 to 0.99; and the ratio of a long side Sa to a short side Sb, Sa/Sb, of a circumparallelogram having a minimum area in respect to the area S1 in the vertical section is from 1.5 to 3.0. The non-magnetic one-component developer contains at least a binder resin and a colorant and has a fluidity index of from 50 to 90 and a floodability index of from 45 to 96.

31 Claims, 10 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	DOC	Unsol D
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☐ 11. Document ID: US 6596452 B2      Relevance Rank: 42

L27: Entry 14 of 15

File: USPT

Jul 22, 2003

US-PAT-NO: 6596452

DOCUMENT-IDENTIFIER: US 6596452 B2

**\*\* See image for Certificate of Correction \*\***

TITLE: Magnetic toner and image-forming method making use of the same

DATE-ISSUED: July 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Magome; Michihisa	Shizuoka-ken			JP
Kukimoto; Tsutomu	Kanagawa-ken			JP
Takiguchi; Tsuyoshi	Kanagawa-ken			JP
Chiba; Tatsuhiko	Kamakura			JP
Hashimoto; Akira	Shizuoka-ken			JP
Komoto; Keiji	Shizuoka-ken			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 09/ 788399      [PALM]

DATE FILED: February 21, 2001

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2000-043671	February 21, 2000
JP	2000-086484	March 27, 2000
JP	2000-086486	March 27, 2000
JP	2000-399203	December 27, 2000

INT-CL: [07] G03 G 9/083, G03 G 9/087, G03 G 13/22

US-CL-ISSUED: 430/106.2; 430/109.3, 430/109.4, 430/110.3, 430/114.4, 430/111.41, 430/122, 430/125, 430/126, 430/902

US-CL-CURRENT: 430/106.2; 430/109.3, 430/109.4, 430/110.3, 430/111.41, 430/122, 430/125, 430/126, 430/902

FIELD-OF-SEARCH: 430/106.1, 430/106.2, 430/110.3, 430/108.23, 430/109.3, 430/109.4, 430/111.4, 430/111.41, 430/122, 430/125, 430/126, 430/902

PRIOR-ART-DISCLOSED:

#### U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4530894</u>	July 1985	Imamura et al.	
<u>4620987</u>	November 1986	Yamashita et al.	427/131
<u>4769676</u>	September 1988	Mukai et al.	355/15
<u>4804609</u>	February 1989	Imanaka et al.	
<u>4820603</u>	April 1989	Sakashita	
<u>4843424</u>	June 1989	Oda et al.	
<u>4851960</u>	July 1989	Nakamura et al.	
<u>5014089</u>	May 1991	Sakashita et al.	
<u>5106815</u>	April 1992	Akada et al.	503/229
<u>5215845</u>	June 1993	Yusa et al.	430/122
<u>5282007</u>	January 1994	Oshiumi	
<u>5432037</u>	July 1995	Nishikiori et al.	430/126
<u>5450180</u>	September 1995	Ohzeki et al.	
<u>5480755</u>	January 1996	Uchiyama et al.	
<u>5508139</u>	April 1996	Tanaka et al.	430/106.1
<u>5669126</u>	September 1997	Nagano et al.	29/25.35
<u>5672454</u>	September 1997	Sasaki et al.	
<u>5948584</u>	September 1999	Hashimoto et al.	
<u>5976755</u>	November 1999	Yoshida et al.	430/126
<u>6077636</u>	June 2000	Moriki et al.	430/45
<u>6081681</u>	June 2000	Nagase et al.	399/174
<u>6128456</u>	October 2000	Chigong et al.	399/176

#### FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
1058157	December 2000	EP	
54-43027	April 1979	JP	
54-84731	July 1979	JP	
57-151952	September 1982	JP	
59-133573	July 1984	JP	
59-168458	September 1984	JP	
59-200254	November 1984	JP	

59-200256	November 1984	JP
59-200257	November 1984	JP
59-224102	December 1984	JP
60-69660	April 1985	JP
61-34070	February 1986	JP
61-141452	June 1986	JP
61-249059	November 1986	JP
61-275864	December 1986	JP
62-203182	September 1987	JP
62-258472	November 1987	JP
62-279352	December 1987	JP
63-133179	June 1988	JP
63-149669	June 1988	JP
63-235953	September 1988	JP
1-020587	January 1989	JP
1-112253	April 1989	JP
2/120865	May 1990	JP
2-123385	May 1990	JP
2-256064	October 1990	JP
2-302772	December 1990	JP
3-9045	February 1991	JP
4-9860	January 1992	JP
4-264453	September 1992	JP
5-2287	January 1993	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
5-66608	March 1993	JP
5-150539	June 1993	JP
5-346682	December 1993	JP
7-99422	April 1995	JP
7-209904	August 1995	JP
8-22191	January 1996	JP
2681791	August 1997	JP
2749122	May 1998	JP
2749234	May 1998	JP
63-250660	October 1998	JP
10-307421	November 1998	JP
10-307455	November 1998	JP
10-307456	November 1998	JP
10-307457	November 1998	JP
10-307458	November 1998	JP
11-38678	February 1999	JP
11-15206	July 1999	JP

ART-UNIT: 1756

PRIMARY-EXAMINER: Dote; Janis L.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper &amp; Scinto

## ABSTRACT:

A magnetic toner comprising magnetic toner particles containing at least a binder resin, a magnetic material containing a magnetic iron oxide, and a release agent. The magnetic toner has a weight-average particle diameter of from 3 .mu.m to 10 .mu.m, a magnetization intensity (saturation magnetization) of from 10 Am.sup.2 /kg to 50 Am.sup.2 /kg (emu/g) under application of a magnetic field of 79.6 kA/m (1,000 oersteds), an average circularity of 0.970 or more, a ratio of weight-average particle diameter to number-average particle diameter, of 1.40 or less, iron and an iron compound which stand liberated from the magnetic toner particles at a liberation percentage of from 0.05% to 3.00%, and a resin component having a tetrahydrofuran-insoluble matter in an amount of from 3% by weight to 60% by weight. Also disclosed is an image-forming method making use of the magnetic toner.

57 Claims, 6 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	DOC	View D.
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☐ 12. Document ID: US 20010028988 A1 Relevance Rank: 42

L27: Entry 9 of 15

File: PGPB

Oct 11, 2001

PGPUB-DOCUMENT-NUMBER: 20010028988

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010028988 A1

TITLE: Magnetic toner and image-forming method making use of the same

PUBLICATION-DATE: October 11, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Magome, Michihisa	Shizuoka-ken		JP	
Kukimoto, Tsutomu	Yokohama-shi		JP	
Takiguchi, Tsuyoshi	Shizuoka-ken		JP	
Chiba, Tatsuhiko	Kamakura-shi		JP	
Hashimoto, Akira	Mishima-shi		JP	
Komoto, Keiji	Numazu-shi		JP	

APPL-NO: 09/ 788399 [PALM]

DATE FILED: February 21, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2000-043671	2000JP-2000-043671	February 21, 2000
JP	2000-086484	2000JP-2000-086484	March 27, 2000
JP	2000-086486	2000JP-2000-086486	March 27, 2000

JP 2000-399203 2000JP-2000-399203 December 27, 2000

INT-CL: [07] G03 G 9/083

US-CL-PUBLISHED: 430/106.1; 430/111.41, 430/110.3, 430/109.3, 430/109.4

US-CL-CURRENT: 430/106.1; 430/109.3, 430/109.4, 430/110.3, 430/111.41

REPRESENTATIVE-FIGURES: NONE

## ABSTRACT:

A magnetic toner comprising magnetic toner particles containing at least a binder resin, a magnetic material containing a magnetic ion oxide, and a release agent. The magnetic toner has a weight-average particle diameter of from 3 .mu.m to 10 .mu.m, a magnetization intensity (saturation magnetization) of from 10 Am.sup.2/kg to 50 Am.sup.2/kg (emu/g) under application of a magnetic field of 79.6 kA/m (1,000 oersteds), an average circularity of 0.970 or more, a ratio of weight-average particle diameter to number-average particle diameter, of 1.40 or less, iron and an iron compound which stand liberated from the magnetic toner particles at a liberation percentage of from 0.05% to 3.00%, and a resin component having a tetrahydrofuran-insoluble matter in an amount of from 3% by weight to 60% by weight. Also disclosed is an image-forming method making use of the magnetic toner.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw.D
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☐ 13. Document ID: US 5406360 A Relevance Rank: 41

L27: Entry 15 of 15

File: USPT

Apr 11, 1995

US-PAT-NO: 5406360

DOCUMENT-IDENTIFIER: US 5406360 A

\*\* See image for Certificate of Correction \*\*

TITLE: Image forming apparatus with contact transfer member

DATE-ISSUED: April 11, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Asai; Jun	Tokyo			JP

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 08/ 091200 [PALM]

DATE FILED: July 14, 1993

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
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JP

4-212158

July 16, 1992

INT-CL: [06] G03 G 15/00

US-CL-ISSUED: 355/274; 355/277

US-CL-CURRENT: 399/313

FIELD-OF-SEARCH: 355/271, 355/274, 355/277, 355/278, 355/279, 355/280, 355/281

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4380385</u>	April 1983	Ozaki et al.	355/277
<u>4719489</u>	January 1988	Ohkubo et al.	355/290
<u>4910558</u>	March 1990	Giezeman et al.	355/279
<u>5038178</u>	August 1991	Hosoya et al.	355/277
<u>5159393</u>	October 1992	Hiroshima et al.	355/277
<u>5172172</u>	December 1992	Amemiya et al.	355/271
<u>5182604</u>	January 1993	Asai	355/273
<u>5233395</u>	August 1993	Kohyama	355/274

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0073071	June 1980	JP	355/274
0247378	October 1987	JP	355/274
0177063	July 1989	JP	355/280
0013170	January 1992	JP	355/277

ART-UNIT: 215

PRIMARY-EXAMINER: Beatty; Robert B.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper &amp; Scinto

## ABSTRACT:

The present invention provides an image forming apparatus with an image bearing member, an image forming device for forming a toner image on the image bearing member, and a transfer device adapted to transfer the toner image onto a transfer material at a transfer station and capable of contacting with a surface of the transfer material opposite to the image bearing member. A combined pressure force of the transfer material and transfer device against the image bearing member during a transferring operation is selected to be 0.2-8 grams per 1 cm in a longitudinal direction of the transfer device.

15 Claims, 14 Drawing figures

Full	Title	Creation	Front	Review	Classification	Date	Reference	Claims	AMC	Draw	U
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☐ 14. Document ID: US 6873816 B2 Relevance Rank: 41

L27: Entry 10 of 15

File: USPT

Mar 29, 2005

US-PAT-NO: 6873816

DOCUMENT-IDENTIFIER: US 6873816 B2

TITLE: Developing assembly, process cartridge and image-forming method

DATE-ISSUED: March 29, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Akashi; Yasutaka	Kanagawa			JP
Goseki; Yasuhide	Kanagawa			JP
Shimamura; Masayoshi	Kanagawa			JP
Fujishima; Kenji	Kanagawa			JP
Saiki; Kazunori	Kanagawa			JP
Otake; Satoshi	Shizuoka			JP
Okamoto; Naoki	Shizuoka			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 10/ 219242 [PALM]

DATE FILED: August 16, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2001-248675	August 20, 2001

INT-CL: [07] G03 G 15/08

US-CL-ISSUED: 399/286

US-CL-CURRENT: 399/286

FIELD-OF-SEARCH: 399/286, 399/279, 399/280, 399/281, 399/282, 399/284, 399/285, 399/274, 399/276, 399/275, 430/12.2, 430/108.6, 430/110.4, 430/111.41

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>2297691</u>	October 1942	Carlson	95/5

<u>3666363</u>	May 1972	Tanaka et al.	
<u>4071361</u>	January 1978	Marushima	96/1.4
<u>4380966</u>	April 1983	Isaka et al.	118/651
<u>4664504</u>	May 1987	Oda et al.	
<u>4769676</u>	September 1988	Mukai et al.	
<u>4851960</u>	July 1989	Nakamura et al.	361/225
<u>4870461</u>	September 1989	Watanabe et al.	
<u>5175070</u>	December 1992	Tanikawa et al.	430/122
<u>5175586</u>	December 1992	Goseki et al.	
<u>5202731</u>	April 1993	Tanikawa et al.	
<u>5274426</u>	December 1993	Goseki et al.	
<u>5282007</u>	January 1994	Oshiumi	
<u>5283618</u>	February 1994	Hosoya et al.	
<u>5432037</u>	July 1995	Nishikiori	430/126
<u>5480755</u>	January 1996	Uchiyama et al.	430/106.6
<u>5618647</u>	April 1997	Kukimoto et al.	430/106.6
<u>5721433</u>	February 1998	Kosaka	250/573
<u>5849453</u>	December 1998	Mikuriya et al.	430/125
<u>5885743</u>	March 1999	Takayanagi et al.	430/110
<u>5912101</u>	June 1999	Karaki et al.	430/110
<u>5976755</u>	November 1999	Yoshida et al.	430/126
<u>6060202</u>	May 2000	Ogawa et al.	430/111
<u>6077635</u>	June 2000	Okado et al.	430/45
<u>6081681</u>	June 2000	Nagase et al.	399/174
<u>6104903</u>	August 2000	Hara et al.	399/265
<u>6115575</u>	September 2000	Kinoshita et al.	399/286
<u>6122473</u>	September 2000	Goseki et al.	399/286
<u>6128456</u>	October 2000	Chigono et al.	399/176
<u>6178306</u>	January 2001	Mizoguchi et al.	399/276
<u>6391511</u>	May 2002	Okamoto et al.	430/120

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
1210283	March 1999	CN	
36-10231	July 1936	JP	
42-23910	November 1942	JP	
43-24748	October 1943	JP	
54-79043	June 1979	JP	
55-26526	February 1980	JP	
56-13945	April 1981	JP	
56-142540	November 1981	JP	
57-66455	April 1982	JP	
57-116372	July 1982	JP	
57-151952	September 1982	JP	
58-11974	January 1983	JP	



59-53856	March 1984	JP
59-61842	April 1984	JP
59-133573	July 1984	JP
59-168458	September 1984	JP
60-69660	April 1985	JP
61-141452	June 1986	JP
61-249059	November 1986	JP
61-275864	December 1986	JP
62-203182	September 1987	JP
62-258742	November 1987	JP
63-133179	June 1988	JP
63-149669	June 1988	JP
64-20587	January 1989	JP
1-131586	May 1989	JP
2-120865	May 1990	JP
2-302772	December 1990	JP
4-9860	January 1992	JP
4-264453	September 1992	JP
5-2287	January 1993	JP
5-2289	January 1993	JP
5-53482	March 1993	JP
5-61383	March 1993	JP
5-66608	March 1993	JP
5-150539	June 1993	JP
5-346682	December 1993	JP
7-99442	October 1995	JP
9-146293	June 1997	JP
10-83096	March 1998	JP
10-307421	November 1998	JP
10-307455	November 1998	JP
10-307456	November 1998	JP
10-307457	November 1998	JP
10-307458	November 1998	JP
2862827	December 1998	JP
11-15206	January 1999	JP
11-95479	April 1999	JP
11-174731	July 1999	JP
11-194530	July 1999	JP
11-202557	July 1999	JP

ART-UNIT: 2852

PRIMARY-EXAMINER: Ngo; Hoang

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

A developing assembly is disclosed having at least a developer container, a developer-carrying member and a developer layer thickness regulation member, wherein the developer is composed mainly of toner particles containing at least a binder resin and a colorant, and conductive fine particles, and the developer-carrying member has a substrate and a surface layer formed on the substrate of a non-magnetic metal, an alloy or a metallic compound. This developing assembly causes no sleeve ghost, enables electrostatic latent images to be faithfully developed, causes no fading phenomenon, and enables high-density images to be formed in every environment. Also disclosed are a process cartridge having the developing assembly and the latent-image-bearing member integrally set as one unit detachably mountable on the main body of an image-forming apparatus, and an image-forming method making use of the features of this developing assembly.

18 Claims, 13 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	DOC	Draw
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☐ 15. Document ID: US 20030123909 A1      Relevance Rank: 41

L27: Entry 8 of 15

File: PGPB

Jul 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030123909

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030123909 A1

TITLE: Developing assembly, process cartridge and image-forming method

PUBLICATION-DATE: July 3, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Akashi, Yasutaka	Kanagawa		JP	
Goseki, Yasuhide	Kanagawa		JP	
Shimamura, Masayoshi	Kanagawa		JP	
Fujishima, Kenji	Kanagawa		JP	
Saiki, Kazunori	Kanagawa		JP	
Otake, Satoshi	Shizuoka		JP	
Okamoto, Naoki	Shizuoka		JP	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo		JP	03

APPL-NO: 10/ 219242    [PALM]

DATE FILED: August 16, 2002

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	248675/2001 (PAT.)	2001JP-248675/2001 (PAT.)	August 20, 2001

INT-CL: [07] G03 G 15/08

US-CL-PUBLISHED: 399/286; 430/124

US-CL-CURRENT: 399/286; 430/124

REPRESENTATIVE-FIGURES: 7

## ABSTRACT:

A developing assembly is disclosed having at least a developer container, a developer-carrying member and a developer layer thickness regulation member, wherein the developer is composed mainly of toner particles containing at least a binder resin and a colorant, and conductive fine particles, and the developer-carrying member has a substrate and a surface layer formed on the substrate of a non-magnetic metal, an alloy or a metallic compound. This developing assembly causes no sleeve ghost, enables electrostatic latent images to be faithfully developed, causes no fading phenomenon, and enables high-density images to be formed in every environment. Also disclosed are a process cartridge having the developing assembly and the latent-image-bearing member integrally set as one unit detachably mountable on the main body of an image-forming apparatus, and an image-forming method making use of the features of this developing assembly.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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Term	Documents
ELASTIC	814443
ELASTICS	3224
LAYER	3486873
LAYERS	1409390
(26 AND (ELASTIC ADJ LAYER)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15
(L26 AND (ELASTIC ADJ LAYER) ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	15

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